

Title (en)
THERMAL CONDUCTION MODULE FOR INTEGRATED CIRCUIT CHIPS

Publication
EP 0031448 A3 19810715 (EN)

Application
EP 80107222 A 19801120

Priority
US 10463579 A 19791217

Abstract (en)
[origin: US4235283A] The thermal conduction module for removing heat from one or more chips located therein consists of a housing made of heat conductive materials forming a cap over the chips. The housing contains one or more openings, one opposite each of the chips. More than one heat conductive element is included in each of the openings and are free to move lengthwise within the opening. The heat conductive elements are spring loaded so that the end of each element contacts the associated chip thereby lowering the thermal resistance of the interface therebetween. Side spring means are located between the sides of adjacent heat conductive elements forcing them away from one another and into contact with the opening wall.

IPC 1-7
H01L 23/42

IPC 8 full level
H01L 23/433 (2006.01)

CPC (source: EP US)
H01L 23/4338 (2013.01 - EP US); **H01L 2924/0002** (2013.01 - EP US)

Citation (search report)

- US 4226281 A 19801007 - CHU RICHARD C
- IBM TECHNICAL DISCLOSURE BULLETIN, Vol. 22, No. 6, November 1979 New York, USA A.J. ARNOLD: "Structure for the removal of heat from an integrated circuit module", pages 2294-2296. * Figure 4; page 2296, 3rd paragraph *
- IBM TECHNICAL DISCLOSURE BULLETIN, Vol. 21, No. 2, July 1978, New York, USA R.C. CHU "Conduction cooling". pages 752-753. * Figure 2; Page 752, 2nd paragraph *
- IBM TECHNICAL DISCLOSURE BULLETIN, Vol. 19, No. 12, May 1977, New York, USA H.C. KAMMERER: "Thermal conduction button", pages 4622-23. * Figure; page 4622, 2nd paragraph *
- IBM TECHNICAL DISCLOSURE BULLETIN, Vol. 23, No. 1, June 1980, New York, USA J.C. HASSON et al. "Pistons for cooling circuit chip", pages 189-190. * Figures 1,3; page 189 *

Cited by
EP0344084A3; EP0071709A3; EP0109543A1; WO8903590A1

Designated contracting state (EPC)
DE FR GB

DOCDB simple family (publication)
US 4235283 A 19801125; DE 3063184 D1 19830616; EP 0031448 A2 19810708; EP 0031448 A3 19810715; EP 0031448 B1 19830511

DOCDB simple family (application)
US 10463579 A 19791217; DE 3063184 T 19801120; EP 80107222 A 19801120